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ABSTRACT

Many educators have concerns about integrating appropriate software in the pre-school curriculum and about what to consider when selecting this technology. This paper presents a criteria for selecting appropriate software for early childhood education. The software that is selected should allow children to explore it and the programs should be child-initiated. Educators should consider the software's age appropriateness, whether it allows independence, its content, and whether it can hold a child's interest. The software should not be isolated but should support all areas of interest--such as blocks, sand, science, dramatic play--and activities that go on in the classroom. Educators should decide on a theme, select appropriate theme-related software, and then develop the activities that will follow. The computer should be seen as another positive tool that can be used to enhance learning and development, and educators should continue to learn about the benefits of this technology for education. (AEF)

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Integrating Appropriate Software in the Pre-school Curriculum

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Title: Integrating Appropriate Software in the Pre-school Curriculum

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Abstract

Many educators have concerns about integrating appropriate software in the pre-school curriculum. Educators have concerns about what to consider when selecting appropriate software and how to integrate it into the early childhood curriculum. The software that is selected should allow children to explore it and the programs should be child-initiated. Certain things educators should consider are: whether software is age appropriate, allows independence, content of software, and holds child's interest. The software should not be isolated but should support all areas of interest and activities that go on in the classroom. Some areas of interest are math, blocks, sand, science, dramatic play, and other familiar areas. The paper presents a criteria for selecting appropriate software for early childhood educators. Educators have to decide on a theme, select appropriate theme related software and then develop the activities that will follow. Computers are being placed in classroom settings and educators need to be familiar with this tool. Educators must overcome their fears and see the computer as another positive tool that can be used to enhance learning and development. Computers are not going away and the best thing to do is to continue to learn about them.

Introduction

What software is appropriate to use in the early childhood curriculum? This question arises when computers are placed in early childhood classrooms with little help on how to include it within the curriculum. As an early childhood educator, I have wondered myself what software is appropriate to use to meet my students needs. Knowing what software is appropriate and how to integrate it within the curriculum allows children to use the computer as a learning tool. Before integrating the software into the curriculum educators must familiarize themselves with software that is available. Early childhood educators must also realize and understand the importance of young children's use of computers. As an educator I realize that computers will benefit young children's learning if used appropriately. I think there are three important things to consider when deciding to integrate appropriate software into the early childhood

curriculum. First, educators must decide on software that is developmentally appropriate to use with the children. The second thing is to decide on how to integrate the software in the curriculum so that it will meet the children's needs. Finally, educators should observe young children to see if the software is beneficial or hinders the child's learning process. Developing appropriate activities using this tool in the classroom will have a major impact on the children's development.

Appropriate Use Of Software

Teachers have to be aware and have knowledge of what type of software are appropriate to use within the curriculum. Daniel D. Shade states that, "the use of a computer is determined by the developmental appropriateness of the software selected" (Daniel D. Shade, 1996, p. 17). Early childhood teachers must gain information and awareness through training opportunities. Having the training in working with computers will allow teachers to achieve the benefits of using computers. If software is not integrated within the curriculum appropriately the computer will become isolated from the other activities. NAEYC states that, "developmentally appropriate software offers opportunities for collaborative play, learning, and creation" (NAEYC, 1996, p. 11). All enriching activities should inter twined with each other. It is so important that teachers make good decisions about which software to use that will support children's learning. For instance, drill and practice software is not appropriate software. This type of software is not meaningful to children and does not give an appropriate assessment on children's learning abilities and skills. Drill and practice software does not allow educators to observe children's performance appropriately since it is not meaningful or enriching. Teaching anything that is irrelevant to the child is a waste of time for the child

and teacher. Using appropriate software allows children to work independently and gain positive social skills. The computer should be used as a tool and support children's learning. Providing opportunities for children to expand their thinking skills and connect the computer with their regular activities. The curriculum should coincide with the technology so that they both meet children's learning needs. NAEYC believes that "educators must use professional judgment in evaluating and using this learning tool appropriately, applying the same criteria they would to any other learning tool or experience" (NAEYC, 1996, p. 11).

Observing children carefully while they are on the computer allows educators to use that observation in making instructional decisions. Educators must keep in mind that, "evaluation can take as long as two hours" (Daniel D. Shade, 1996, p. 18). The software that is chosen must meet the individual child's skill and the goals of the curriculum. The biggest challenge with the use of software is for educators to find time and resources to use this tool effectively (Groves, Jarnigan, & Eller, 1998, p. 2). NAEYC states that, "early childhood educators have responsibility to critically examine the impact of technology on children and be prepared to use technology to benefit children" (NAEYC, 1996 p. 11).

Evaluating Software-Factors to consider when selecting appropriate software

The following seven factors came from a variety of sources and some personal ideas from my own experiences with selecting appropriate software for my pre-kindergarten class.

Factor 1: The software must be age appropriate. Educators must select software that will meet the child's age level. If software does not meet their age level, then the use of the computer becomes frustrating or boring to he child (Jane Davidson, 1989, p. 47).

Factor 2: Children should control what happens on the computer. For instance, move from one part of the program to another part with no problems. Jane Davidson states that, "children must always work within the limits of the chosen, media, but allow room for exploration and experimentation" (p. 46).

Factor 3: Children should be allowed to work the software on their own. After a brief introduction of software, children should feel at ease with using the computer (p. 44). To avoid problems in the classroom when including the computer, children should work independently or with a partner.

Factor 4: Software must allow children to experience trial-and-error exploration (Jane Davidson, 1989, p. 47). Children need the opportunity to make decisions and correct any mistakes that they make on their own. Educators need to know how the software deals with the errors that children may make. Hearing a loud sound or someone speaking is not a good way to enhance children's self-concept (p. 47).

Factor 5: Software should maintain children's interest when they use it (p. 48). They should not get bored so easily. Children should be active learners and should have enough time to explore the software.

Factor 6: Educators must select software that has appropriate content (p. 47). The software should not have any type of stereotypes, violence or aggression featured in the software (p. 47). Such stereotypes like: violence, gender bias, and racist content.

Factor 7: The quality of the software must be considered. It is important to evaluate how the program runs, if the picture and sound is good (p. 48). If the sound or picture is not working then the child on the computer will have a hard time working with the software. They should see a clear picture and the sound should be working because they will have difficulty following the directions that may involve mastering a skill.

Social-Emotional-Cognitive Domain: Related to software/computer use

Students' use of the computer will enhance their social, emotional and cognitive development. Jane Davidson and June Wright states that "children learn best when they are free to explore their environment developing their own projects without predetermined goals set by others' (Jane Davidson & June Wright, 1994, p. 77). Having access to computers allow children the opportunity to meet this need. As an educator, I have gained a lot of self-esteem along with my students as I watch them work on the computer. My students enjoy the Mr. Potato Head software.

Social Domain

Most children work on the computer with a partner unlike adults. Children have the opportunity to share with each other their ideas and opinions about the software. When they work with someone they are more likely to help each other out and use a lot of language. By working with someone they are enhancing social skills. It was interesting to listen to the different conversations that went on when the children were dressing up Mr. Potato Head. One student had his own opinion about what shoes he should wear but respected the other child's decision when she picked a different pair of shoes. Jane Davidson and June Wright mentions that "if children envision different out comes they must use their most persuasive language to convince the other children that their way is

best" (p. 79). The biggest problem that may occur is for the children to take turns at using the computer. Most software does not allow turn taking so it is up to the teacher to help in negotiating turns.

Emotional Domain

The emotional development that is seen through the use of the computer is how powerful and independent children become when they can master a skill or activity. Children learn how to be creative which builds their self-esteem. They can create pictures, stories and imaginary worlds (p. 85). By being creative they are expressing their personalities. The authors state that, "self-expression validates the importance of each child as an individual" (p. 85).

Cognitive Domain

Software that is open-ended and allows children to make decisions will enhance their cognitive development. Cognitive growth is often seen through specific skills like, counting, identifying shapes and colors (p. 85). However, there is more to children's cognitive development. Through the use of appropriate software children are able to solve problems, draw conclusions, explore and experiment different activities on the software. NAEYC mentions that, "when used appropriately, technology can support and extend traditional materials in valuable ways" (NAEYC, 1996, p. 12).

Review of Appropriate Software for Pre-school Curriculum

Computers can be used to enhance and support the early childhood curriculum. Educators usually used thematic units to stimulate learning and development (Jane Davidson, 1994, p. 178). There are several activities that can be used with appropriate software. However, early childhood educators must choose a theme of interest, then

select software and decide on activities. The activities would be an extension of the software that is implemented into the curriculum. If the theme is about famous children's author, for example, children could use The Dr. Seuss software. This software teaches children how to sort, pattern differences, recognize numerals, matching flowers, rhyming words, and recognizing letters. Their pre-reading and pre-math skills are enhanced with this software. Dr. Seuss is a popular author who writes books that all children enjoy reading. Educators need to keep in mind, which Dr. Seuss books they want to use. The following are some extended activities for math, science, language arts, social studies, music, art, cooking, dramatic play, and other areas of interest. Extended activities for math and science are: reading The Foot Book, then have students count the number of feet between boys and girls and make a chart. Graph shoes according to characteristics and make patterns with students' shoes. Have a discussion of different parts of a flower and expose them to different flowers. Extended activities for language arts and social studies are: reading several Dr. Seuss books and have discussions abut differences and similarities of the books (make graphic organizers or experience charts). Play a game of rhyming bingo using the rhyming words from the book. Introduce children to who Dr. Seuss is and allow them to learn about his life and achievements (do research). Extended activities for music, movement, and art are: students can listen to or watch Dr. Seuss video or tape cassettes. The software allows students to click on birds that will sing to them, which encourages them to make their own music. Students can dance and act out parts of the song. Paint feet and create a feet book (refer to The Foot Book). Paint green eggs and ham figures (refer to Green Eggs and Ham) and an eggshell artwork. List green foods and cut out different green foods and make a collage. Extended activities for

cooking and dramatic play are: cooking green eggs and ham using green food dye. Dress up and act out the character's roles from the book. Role-playing in front of the class with or without puppets. These are just a few areas that are part of the early childhood curriculum. The process of selecting appropriate software becomes easy when educators use theme related software. The activities provide opportunities to encourage all areas of development (p. 178). Other appropriate software to look into are: Sesame Street Music Maker, Playskool Puzzles, Mr. Potato Head, Elmo's Art Workshop, and More Bugs in a Boxes. These are just a few that ranked high with my students and The Review Corner.

Software in the Classroom

To enhance my knowledge of the topic I developed a criteria for educators who are in the process of selecting appropriate software. I presented two soft- wares to a group of students over a period of time. The software that I selected was called: Mr. Potato Head and More Bugs in a Boxes. The software was introduced for two weeks to small groups and then students worked individually or with a partner. There were twenty four year olds who attended the private daycare. My purpose of this project was to see if the use of appropriate software would enhance children's emotional and social development.

Criteria for selecting appropriate software

I developed a criteria that will allow educators the chance to feel at ease when selecting and exploring new software. Educators have to purchase educational software and age appropriate software. Educators need to know their students' strengths and weaknesses so that they can meet their needs. For example, some children are visual learners. Children who are visual learners may need to see specific pictures when using

the computer to master a skill. Software must be attractive and meaningful to encourage children to become active learners with the computer. Knowing a child's interest is very important because the appropriate software will keep them focus and intoned to the program. Educators can use the software to observe children and modify their instruction. First, you must decide on a theme or skill that you want to focus on. Then select software that will reinforce the skill or purchase theme related software. Before introducing the software to the children, the teacher has to make time and explore the software. Finally, develop activities that will reinforce what the children are doing on the computer. An educator should know what their students are capable of doing. We want our students to gain good social, emotional and cognitive skills. I believe, when the computer is used with confidence by the teacher the children will enhance those above skills.

Implementing the software

I decided to begin my project by introducing the Mr. Potato Head software first. Before introducing the software I decided on a theme, then I spent 2 ½ hours exploring the software making sure that it will meet my goals and my students' needs. The theme that was chosen was "the parts of our body". This software consists of basic math skills, problem solving (puzzles), painting (creativity), and alphabet concepts (connect dots), and dress up. Children worked mostly with a partner with this software. After introducing the software the children were allowed to explore the software on their own. Within two days they were working with the software with no problems. They did not even ask me for help. They would ask each other if they needed help with something. This gave me a chance to work with other children and observe them at the computer.

The children enjoy dressing up Mr. Potato Head more than any other part on the program. While dressing him up they were learning about the different body parts that are needed to make a person. The conversations between the children were pleasing to hear. Some children were very persuasive and were able to convince the other child to do what they wanted them to do. While other children did not pay any attention to the child who was being persuasive. They laugh about the silly ways they can dress Mr. Potato Head and they learned how to communicate and make decisions. I develop activities that were related to the theme and software. For instance, students took turns tracing each other bodies and then they label their body parts (with my guidance). At the sand table, children looked for several body parts that were hidden in the sand. There were a lot of literature and pictures displayed in the room for reading and discussions.

The second, software was More Bugs in a Boxes. This software has more math concepts and music. The theme for this software was "insects". The different parts in the software allowed children to match different bugs' with their body parts by looking at color and shape. There is a memory game on the program that allows children to visually remember what happen before and what happens next. Children had to listen to a bug ask questions about differences and similarities of several bugs that were on the screen. Most of the children enjoyed working alone. They did not mind getting help but they rather learn from their mistakes on their own. Some extended activities for this software were going on a walk and looking for different insects and we kept track of them. I brought in pictures of insects and made charts with the children about their favorite insect. Then they had to draw a picture of their favorite insect and explain why it was their favorite insect. There were insects hidden in the sand box for them to find. In block

area children were able to play with fake insects. Several literatures were used in helping students learn more about the theme.

In my opinion, the software chosen were appropriate for this age group. The children's self-esteem and confidence develop over time. This made them active learners and allowed them to work independently on the computer. The use of software will only benefit children if used appropriately.

Summary

Educators have to make critical decisions as to what software to use and how to integrate it in the curriculum. Advancement in technology over the years has made the length of time longer and difficulty in selecting appropriate software. Educators need training, support and sufficient time to evaluate children's software. Technology has to be experienced by the teacher first before allowing the children to experience it. Suzanne Thouvenelle, Mario Borunda, and Ceasar McDowell states that "offering teachers opportunities to make the transition form exploring the software to using the computer as a tool will enhance their confidence and lesson the anxiety with which they approach technology" (Thouvenelle, Borunda, & McDowell, 1994, p. 164). As educators, we must carefully select software in relation to their philosophy of teaching and curriculum goals.

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